eye and in the teleſcope. As the ſame cauſes obſcured almoſt all the ſtars near it, I had great difficulty in fixing its place on the globe. It appears however, now, evidently, to be moving contrary to the order of the ſigns, and more conſiderably northwards, *i. e.* ſlowly retrograde, with a decreaſing ſouth latitude.

Hampſtead,
May 6. 1759.

N. M.

XVII. *A Catalogue of the* Fifty Plants *from* Chelſea Garden, *preſented to the* Royal Society *by the worſhipful Company of Apothecaries, for the Year* 1757, *purſuant to the Direction of Sir* Hans Sloane, *Baronet, Med. Reg. & Soc. Reg. nuper Præſes, by* John Wilmer, *M. D. clariſſ. Societatis Pharmaceut.* Lond. *Socius, Hort.* Chelſean. *Præfectus & Prælector Botanic.*

Read May 3, 1759.

1801 ACinos Syriaca, folio tenuiore, capſulis hirſutis. Mor. Hiſt.

1802 Ægilops Lobelii.

1803 Ambroſia maritima. C. B. 138. Ambroſia quibuſdam. J. B. 3. 190.

1804 Arum Zeylanicum humile latifolium, piſtillo purp. Miller.

1805 Aſtragalus cauleſcens erectus piloſus, floribus ſpicatis, leguminibus ſubulatis piloſis, Lin. Sp. Pl. 756.

1806

1806 Ceraſtium, floribus pentandris, petalis integris, Loefl. Deſc. 26.

1807 Chenopodium foliis lanceolatis carnoſis, corymbis dichotamis ſpinoſis, Lin. Sp. Plant. 221.

1808 Chironia fruteſcens capſulifera, Lin. Sp. Plant. 190.

1809 Clethra Linnæi Alnifolia Americana ſerrata, floribus pentapetalis albis, in ſpicam diſpoſitis, Pluk. Alm. p. 18. tab. 115. fig. 1. Cateſby, vol. 1. p. 66. tab. 66.

1810 Clinopolium orientale origani folio, fl. minimo, T. Cor.

1811 Delphinium nectariis dyphillis, labellis integris, floribus ſubſolitariis, foliis compoſitis linear-multipartitis, Hort. Upſal. Delphinium elatius ſubincanum perenne, flor. amplis azureis, Amman. 132.

1812 Doria Americana lato rigido folio, Boerh. Ind. Alt. 98. Virga aurea ex Nova York, foliis ſymphiti majoris hirſutis, Schol. Botan. Par.

1813 Gallium album linifolium, Barrel. obſ. 99.

1814 Galium caule erecto, foliis quaternis lanceolatis trinerviis, Fl. Lap. 60. Gallium album quadrifolium erectum, Celſ. Upſal. 22.

1815 Galeopſis, ſive Urtica iners, flore luteo, J. B.

1816 Geniſta ramis ancipitibus articulatis, foliis ovato-lanceolatis, Hort. Cliff. 355.

1817 Geranium Batrachoides Americanum maculatum, floribus obſolete purpureis, Hort. Elt. 158.

1818 Geranium pedunculis ſubunifloris, foliis quinquepartitis acutis, foliolis pinnatifidis, Lin. Sp. Pl. 685.

1819 Gladiolus foliis linearibus ſulcatis, caule bifloro, tubo longiſſimo, ſegmentis æqualibus, Miller's Dict.

1820 Glycyrrhiza ſiliquoſa, vel Germanica, C. B. P. 352.

1821 Hydrangea, flor. Virgin. 50.

1822 Lamium foliis caulem ambientibus, C. B. 231.

1823 Larix orientalis, fructu rotundiori obtuſo, T. 586. Cedrus magna ſive Libani conifera, J. B. 1. 277.

1824 Lotus maritima lutea ſiliquoſa, folio pingui glabro, Bot. Monſp.

1825 Lychnis ſaponaria dicta folio convoluto, Gentiana concava, Ger. 253.

1826 Mandragora fructu rotundo, C. B. 169. Off. 300.

1827 Meſpilus ſpinoſa, pyri folio, H. Leyd. Pyracantha quibuſdam. J. B. 151.

1828 Meſpilus foliis lanceolatis ſerratis, ſpinis robuſtioribus, floribus corymboſis, Miller's Ic.

1829 Meſpilus foliis cordato-ovatis, acuminatis, marginibus acute ſerratis, ramis ſpinoſis, Miller's Ic.

1830 Mitella ſcapo nudo, Hort. Cliff. 167.

1831 Oenothera foliis radicalibus ovatis, caulinis lanceolatis obtuſis, capſulis ovatis ſulcatis, Miller's Icons.

1832 Onobrychis major, ſiliculis echinatis, criſtatis, in ſpica digeſtis, Mor. Hiſt. 2. 131.
Onobrychis foliis viciæ, fructu echinato, major, C. B. 350.

1833 Orobus foliis conjugatis ſubſeſſilibus, ſtipulatis, dentatis, Hort. Upſal, 220.

Lathy-

Lathyroides erecta, folio ovato acuminato, cæruleis viciæ floribus, et ſiliquis Siberica, Amman. Ruth. 151. T. 7. F. 2.

1834 Padus foliis oblongo-ovatis ſemper virentibus eglanduloſis, Miller's Icons.

Lauroceraſus Luſitanica minor Azarero Luſitanorum, Tourn. Inſt. R. H. 628.

1835 Polemonium foliis pinnatis radicibus reptatricibus, Flor. Virgin. 22.

1836 Pulmonaria calycibus abbreviatis, foliis lanceolatis obtuſiuſculis, Lin. Sp. Pl. 135.

Pulmonaria non maculoſa foliis glabris, Americana flore patulo cæruleo, Pluk. Phyt. Tab. 227. Fig. 6.

1837 Salicornia, T. Cor. 51. Kali geniculatum, Ger. Em. 535.

1838 Senecio corollis radiantibus, foliis crenatis, infimis cordatis petiolatis, ſuperioribus pinnatifidis lyratis, Flor. Virgin.

1839 Serratula, C. B. P. 235. Jacea nemorenſis, quæ Serratula vulgo, T. 444.

1840 Serratula foliis oblongo-ovatis, obtuſe dentatis, caule ramoſo patulo, calycibus ſubrotundis mollibus, Miller's Dict.

1841 Spartium ramis oppoſitis angulatis, foliis oppoſitis ſubulatis, Lin. Sp. Pl. 708.

1842 Spiræa Africana odorata, foliis piloſis, Comm. rar. 3.

1843 Stramonium Americanum maximum, flore albo, fructu rotundo ſpinoſo, Tourn.

1844 Tilia foliis molliter hirſutis, viminibus rubris, fructu tetragono, Ray, Synop. 2. 316.

Tilia hirſuta coryli foliorum æmula, fructu anguloſo, Pluk. Mant. 181.

1845 Trillium flore pedunculato cernuo, Lin. Sp. Pl. 339.

1846 Valeriana montana ſubrotundo folio, C. B. P. 165.

1847 Vicia pedunculis multifloris, petiolis polyphillis, foliolis lanceolatis glabris, Hort. Upſal, 219.

1848 Vicia ſylvatica multiflora maxima perennis, tetro odore, floribus albentibus, lineis cæruleis ſtriatis, Pluk. Alm. 387.

1849 Vinca foliis oblongo-ovatis integerrimis, tubo floris longiſſimo, caule ramoſo fruticoſo, Miller's Iconſ.

1850 Xanthium, ſive Lappa minor, J. B. 3. 572. Lappa minor, ſive Xanthium Dioſcorid. C. B. P. 198.

XVIII. *An experimental Enquiry concerning the natural Powers of Water and Wind to turn Mills, and other Machines, depending on a circular Motion.* *By Mr.* J. Smeaton, *F. R. S.*

Read May 3, & 10, 1759.

WHAT I have to communicate on this ſubject was originally deduced from experiments made on working models, which I look upon as the beſt means of obtaining the outlines in mechanical enquiries. But in this caſe it is very neceſſary to diſtinguiſh the circumſtances in which a model differs from a machine in large; otherwiſe a model is more apt to lead us from the truth